

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 1. (Currently Amended) A hard disk carrier package for providing high
2 density storage, comprising:
3 a hard disk carrier housing for use in a hard disk array enclosure and for holding
4 multiple hard disk storage devices; and
5 a package-level RAID controller, disposed with the carrier housing and coupled to
6 the carrier housing, the package-level RAID controller providing a RAID logical
7 configuration at a hard disk carrier package-level for the storage devices held in the hard
8 disk carrier housing.

1 2. (Canceled)

1 3. (Currently Amended) The hard disk carrier package of claim [[2]] 1,
2 wherein the package-level RAID controller hides the physical address of the hard disk
3 storage devices.

1 4. (Currently Amended) The hard disk carrier package of claim [[2]] 1,
2 wherein the package-level RAID controller is further configured to provide a hot spare
3 held in the hard disk carrier housing for use when a hard disk storage device within the
4 hard disk carrier housing fails.

1 5. (Currently Amended) The hard disk carrier package of claim [[2]] 1,
2 wherein the hard disk carrier housing is configured to be conformal to multiple hard disk
3 storage devices to minimize the amount of space used to house a predetermined number
4 of hard disk storage devices.

1 6. (Currently Amended) The hard disk carrier package of claim [[2]] 1,
2 wherein the hard disk carrier housing further comprises fault indicators for allowing
3 notification of an inoperable hard disk storage devices within the hard disk carrier
4 housing.

1 7. (Currently Amended) The hard disk carrier package of claim 6, wherein
2 the fault indicators are battery-powered.

1 8. (Currently Amended) The hard disk carrier package of claim [[2]] 1,
2 wherein the hard disk carrier housing further comprises a spring-loaded bracket for
3 holding each of the hard disk storage devices in place.

1 9. (Currently Amended) A package-level RAID controller for providing a
2 RAID configuration to a hard disk carrier package, comprising:
3 memory for storing data therein; and
4 a processor, coupled to the memory, the ~~processing~~ processor being configured
5 for providing a RAID logical configuration at a hard disk carrier package-level for hard
6 disk storage devices held in a hard disk carrier package.

1 10. (Canceled)

1 11. (Currently Amended) The package-level RAID controller of claim [[10]]
2 9, wherein the processor is configured to hide the physical address of the hard disk
3 storage devices within a hard disk carrier housing.

1 12. (Currently Amended) The package-level RAID controller of claim [[10]]
2 9, wherein the processor is configured to provide a hot spare held in ~~the~~ a hard disk
3 carrier housing for use when a storage device within the hard disk carrier housing fails.

1 13. (Currently Amended) The package-level RAID controller of claim [[10]]
2 9, wherein the processor is configured to present the hard disk storage devices in ~~the~~ a
3 hard disk carrier housing as one logical storage device.

1 14. (Currently Amended) A storage system, comprising:
2 a plurality of hard disk carrier packages for providing high density storage, each
3 hard disk carrier package comprising a hard disk carrier housing for holding multiple
4 hard disk storage devices and a hard disk carrier package-level RAID controller, coupled
5 to the hard disk carrier housing, for providing a RAID logical configuration at a hard disk
6 carrier package-level for hard disk storage devices held in a hard disk carrier package;
7 an hard disk array enclosure for holding the plurality of the hard disk carrier
8 packages for providing high-density storage;
9 a hard disk carrier package aggregator, coupled to the plurality of hard disk carrier
10 packages, the hard disk carrier package aggregator providing connections to each of the
11 plurality of hard disk carrier packages for power, control and signaling; and
12 a system level controller, coupled to the plurality of hard disk carrier packages,
13 for implementing a desired storage system configuration.

1 15. (Currently Amended) The storage system of claim 14, wherein the system
2 level controller comprises a system-level RAID controller for providing a system-level
3 RAID logical configuration across the plurality of hard disk carrier packages.

1 16. (Currently Amended) The storage system of claim 14, wherein the system
2 level controller comprises a system-level RAID controller for providing a system-level
3 RAID logical configuration across the plurality of hard disk carrier packages and each of
4 the hard disk carrier package-level RAID controllers providing a hard disk carrier
5 package-level RAID logic configuration across the plurality of hard disk storage devices
6 in a hard disk carrier package.

1 17. (Currently Amended) The storage system of claim 14, wherein a first of
2 the plurality of hard disk carrier packages presents a first hard disk carrier package-level
3 RAID logical configuration across the plurality of hard disk storage devices in the first of
4 the plurality of hard disk carrier packages and a second of the plurality of hard disk
5 carrier packages presents a second hard disk carrier package-level RAID logical
6 configuration across the plurality of hard disk storage devices in the second of the
7 plurality of hard disk carrier packages.

1 18. (Currently Amended) The storage system of claim 17, wherein the system
2 level controller comprises a system-level RAID controller for providing a system-level
3 RAID logical configuration across the first and second of the plurality of hard disk carrier
4 packages.

1 19. (Currently Amended) A storage system, comprising:
2 a plurality of hard disk carrier packages for providing high density storage, each
3 hard disk carrier package comprising a hard disk carrier housing for holding multiple
4 hard disk storage devices proximate to one another and aligned in a row and a hard disk
5 carrier package controller, coupled to the hard disk carrier housing, for virtualizing
6 logical addresses of the multiple hard disk storage devices as at least one aggregate
7 volume to provide a layer of abstraction to the hard disk storage devices;
8 an enclosure for holding the plurality of the hard disk carrier packages for
9 providing high-density storage;
10 a hard disk carrier package aggregator, coupled to the plurality of hard disk carrier
11 packages for providing high density storage, the hard disk carrier package aggregator
12 providing connections to each of the plurality of hard disk carrier packages for power,
13 control and signaling; and
14 a system level controller, coupled to the plurality of hard disk carrier packages,
15 for implementing a desired storage system configuration.

1 20. (Currently Amended) The storage system of claim 19 further comprising
2 an access device, coupled to the hard disk carrier housing, for structuring access to
3 physical addresses of the multiple hard disk storage devices and providing access to each
4 of the multiple hard disk storage devices over one connection.

1 21. (Currently Amended) The storage system of claim 19, wherein the access
2 device aggregates the physical addresses of the hard disk storage devices into logical
3 addresses and makes the logical addresses available over one connection.

1 22. (Currently Amended) A hard disk carrier package for providing high
2 density storage, comprising:
3 means for holding multiple storage devices; and
4 means, coupled to the means for holding, for providing a RAID logical
5 configuration at a package-level for the storage devices held in the means for holding.

1 23. (Currently Amended) A hard disk carrier package for providing high
2 density storage, comprising:
3 means for use in a hard disk array enclosure and for holding multiple hard disk
4 storage devices proximate to one another ~~and aligned in a row~~; and
5 means, disposed with the means for holding and coupled to the means for holding,
6 for virtualizing logical addresses of the multiple hard disk storage devices as at least one
7 aggregate volume to provide a layer of abstraction to the hard disk storage devices held in
8 the means for holding.

1 24. (Currently Amended) A method for providing a high density storage
2 package, comprising:
3 providing a hard disk carrier housing for holding multiple hard disk storage
4 devices; and
5 providing a RAID logical configuration at a hard disk carrier package-level for
6 the hard disk storage devices held in the hard disk carrier housing.

1 25. (Currently Amended) A method for providing a high density storage
2 package, comprising:
3 providing a hard disk carrier carrier housing for holding multiple hard disk
4 storage devices proximate to one another ~~and aligned in a row~~; and
5 virtualizing logical addresses of the multiple hard disk storage devices as at least
6 one aggregate volume for the hard disk carrier to provide a layer of abstraction to the
7 hard disk storage devices.